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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/579,856

05/17/2006

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EXAMINER

WANG-HURST, KATHY W

ART UNIT

PAPER NUMBER

2617

NOTIFICATION DATE

DELIVERY MODE

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ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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<b>Office Action Summary</b>	<b>Application No.</b> 10/579,856	<b>Applicant(s)</b> MIYAMOTO, HIROAKI	
	<b>Examiner</b> KATHY WANG-HURST	<b>Art Unit</b> 2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1,3-7,9-13 and 15-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 3-7, 9-13 and 15-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948)                        | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 12/15/2009 has been entered.

### ***Remarks***

2. Claims 1, 3-7, 9-13 and 15-25 are all the claims pending in the application. Claims 1, 3, 4, 5, 6, 7, 9, 12, 13, 15, 16, 17, 19, 20, 21, 22 and 23 are amended.

### ***Response to Arguments***

2. Applicant's arguments with respect to claims 1, 3-7, 9-13 and 15-25 have been considered but are moot in view of the new ground(s) of rejection.

The prior art of record Walls has been modified with new reference Ma. For clarification applicant's arguments regarding the prior reference Walls are addressed below with explanation of the new reference.

Regarding the applicant's argument that "Walls does not control the transmission rate of a reception acknowledgment signal at all" (page 8), the examiner respectfully disagrees.

Firstly, the word "rate" is a very broad term. "rate" is defined as "a magnitude or frequency relative to a time unit" (from Google dictionary). Thus by reducing the number

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of ACK transmission in a given time period would be considered reducing the rate of ACK transmission. Therefore given the broadest claim interpretation, Walls does disclose controlling the transmission rate of a reception acknowledgement signal.

Secondly, when "rate" is given a much narrower meaning in the light of the argument (page 9), *arguendo*, that rate must be changed from a specific numeric value (say 24Mbps) to a new value, Ma is brought to show such feature is well known in the art. In Ma, ACK rate is adjusted by a factor based on channel congestion condition. When the network is too congested, the ACK rate is reduced by a factor  $R$  ( $R < 1$ ). Thus the ACK rate is changed from an old value to a new value.

Therefore, the combination of Walls and Ma teaches controlling the transmission rate of a reception acknowledgment signal.

Concerning the combination of references, both of the references are from the same field, i.e. communication systems and concern analogous topics. Therefore, the examiner contends that the references would be combinable to one skilled in the art.

Therefore, the argued limitations read upon the cited references or are written broad such that they read upon the cited references, as follow.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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3. Claims 1, 3-6, 9-13 and 15-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Walls et al. (US 2004/0156315) in view of Ma et al. (US 7369498).

Regarding claims 1, 7, and 13, Walls discloses a data communication system comprising:

a means of transmitting a reception acknowledgement signal from a first wireless station ([0032]);

a means of controlling a transmission number of the reception acknowledgement signal transmitted from the first wireless station in response to reception of a data frame from a second wireless station (see e.g. [0032][0036][0038] receiving unit receiving data packets from transmitting unit, receiving unit sending retransmission request if receiving unit recognizing some of the received data packets are out of sequence which indicates that some data packets are missing, receiving unit slowing down the retransmission request rate/reception acknowledgement rate if there are too many retransmission requests),

wherein the means of controlling controls the transmission number of the reception acknowledgement signal based on the number of retransmissions of the data frame (see e.g. [0032][0036][0038] slowing down retransmission request rate if there are too many retransmission requests).

Walls discloses the data communication system but does not specifically disclose a wireless communication system and packet transmission station is a wireless station. Ma teaches the data communication system is a wireless communication system and

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packet transmission station is a wireless station (see at least col. 1 lines 5-10 and col. 3 lines 58-61 and col. 4 lines 7-10).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Walls, and take a variety of computer network systems and make use of wireless communication systems, as taught by Ma, thus improve the flexibility of the network and allow users to access a network wirelessly.

In addition, Walls discloses controlling a number of acknowledgement transmission based on network conditions ([0036]) but does not specifically disclose controlling the rate of acknowledgement transmission based on network conditions.

Ma discloses controlling the transmission rate of acknowledgements based on network conditions (see e.g. col. 5 lines 44-50 and col. 11 lines 8-15, adjusting a ACK rate by a factor R based on network conditions).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Walls, to adjust the ACK rate by a factor based on network traffic conditions, as taught by Ma, thus allowing a better congestion control for a packet switched network (col. 3 lines 55-61).

Regarding claims 3, 9 and 15, Walls discloses the data communication system according to claim 2, wherein the means of controlling makes the transmission number lower than a current transmission number when the number of retransmissions of the data frame is greater than a first predetermined value ([0038] [0036]).

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Walls discloses the data communication system but does not specifically disclose a wireless communication system and packet transmission station is a wireless station. Ma teaches the data communication system is a wireless communication system and packet transmission station is a wireless station (see at least col. 1 lines 5-10 and col. 3 lines 58-61 and col. 4 lines 7-10).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Walls, and take a variety of computer network systems and make use of wireless communication systems, as taught by Ma, thus improve the flexibility of the network and allow users to access a network wirelessly.

In addition, Walls discloses controlling a number of acknowledgement transmission based on network conditions ([0036]) but does not specifically disclose controlling the rate of acknowledgement transmission based on network conditions.

Ma discloses controlling the transmission rate of acknowledgements based on network conditions (see e.g. col. 5 lines 44-50 and col. 11 lines 8-15, adjusting a ACK rate by a factor R based on network conditions).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Walls, to adjust the ACK rate by a factor based on network traffic conditions, as taught by Ma, thus allowing a better congestion control for a packet switched network (col. 3 lines 55-61).

Regarding claim 4, 10 and 16, the combination of Walls and Ma discloses the data communication system, wherein the means of controlling controls the transmission

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rate of the reception acknowledgement signal based on the number of successive successes for the data frame (see Wall:[0032]; [0036]; [0039] it is equivalent of saying more packets are successfully received and therefore fewer retransmission requests are made. Also see Ma: col. 5 lines 44-50 and col. 11 lines 8-15, adjusting a ACK rate by a factor R based on network conditions).

Regarding claims 5, 11 and 17, Walls in view of Ma discloses the data communication system according to claim 4, wherein the means of controlling makes the transmission rate higher than the current transmission rate when the number of retransmission requests is below a predetermined value ([0039] it is equivalent of saying more packets are successfully received and therefore fewer retransmission requests are made. Also see Ma: col. 5 lines 44-50 and col. 11 lines 8-15, adjusting a ACK rate by a factor R based on network conditions).

Regarding claims 6, 12, 18, 20-25, Walls discloses a generic communication system according to any one of claims 1 to 5 ([0003][0036]), but fails to disclose communication system is a wireless communication system wherein the wireless station and another wireless station are an access point and a mobile communication terminal in a wireless LAN system.

Ma teaches the data communication system is a wireless communication system and packet transmission station is a wireless station (see at least col. 1 lines 5-10 and col. 3 lines 58-61 and col. 4 lines 7-10).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Walls, and take a variety



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of computer network systems and make use of wireless communication systems, as taught by Ma, thus improve the flexibility of the network and allow users to access a network wirelessly.

Regarding claim 19, Walls discloses a computer readable medium containing a program for use by or in connection with the instruction execution system ([0041]) that allows a computer to perform an operation of a packet transmission station that transmits a reception acknowledgement signal in response to a data frame transmitted from another packet transmission station, the program comprising a process of controlling a number of the reception acknowledgement transmission signal based on the number of retransmissions of the data frame ([0036]).

Walls discloses the data communication system but does not specifically disclose a wireless communication system and packet transmission station is a wireless station. Ma teaches the data communication system is a wireless communication system and packet transmission station is a wireless station (see at least col. 1 lines 5-10 and col. 3 lines 58-61 and col. 4 lines 7-10).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Walls, and take a variety of computer network systems and make use of wireless communication systems, as taught by Ma, thus improve the flexibility of the network and allow users to access a network wirelessly.

In addition, Walls discloses controlling a transmission number of acknowledgements based on network conditions ([0036]) but does not specifically

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disclose controlling the transmission rate of acknowledgements based on network conditions.

Ma discloses controlling the transmission rate of acknowledgements based on network conditions (see e.g. col. 5 lines 44-50 and col. 11 lines 8-15, adjusting a ACK rate by a factor R based on network conditions).

Therefore, it would have been obvious to a person having ordinary skill in the art at the time the invention was made to modify the invention of Walls, to adjust the ACK rate by a factor based on network traffic conditions, as taught by Ma, thus allowing a better congestion control for a packet switched network (col. 3 lines 55-61).

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to KATHY WANG-HURST whose telephone number is (571) 270-5371. The examiner can normally be reached on Monday-Thursday, 7:30am-5pm, alternate Fridays, EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro can be reached on (571) 272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/KATHY WANG-HURST/  
Examiner, Art Unit 2617

/NICK CORSARO/  
Supervisory Patent Examiner, Art Unit 2617